

REMARKS

Reconsideration of this Application is respectfully requested. Upon entry of the foregoing amendments, claims 2, 3, 5, 8-12, 15 and 21-28 are pending in the application, with claims 8 and 21 being the independent claims. Claims 1, 4, 6, 7, 13, 14, and 16-20 have been canceled without prejudice or disclaimer in an attempt to expedite prosecution of the present application. Support for the subject matter of the amended claims is contained in the application as originally filed. Because the foregoing changes introduce no new matter, their entry is respectfully requested.

Based on the above Amendment and the following Remarks, Applicant respectfully requests that the Examiner reconsider all outstanding objections and rejections and that they be withdrawn.

Information Disclosure Statement

An Information Disclosure Statement (IDS) was filed October 3, 2003. A copy of the IDS is attached hereto. Although the IDS was filed three weeks prior to the Office Action of October 24, 2003, the Examiner did not acknowledge the IDS by initialing the list of references accompanying the IDS, signing and dating the list, and returning a copy of the list with the Office Action. *See* M.P.E.P. § 609(III)(C)(2), page 600-131.

During a telephone conversation on January 8, 2004 between Examiner Arun S. Phasge and the undersigned, the undersigned explained that the IDS was filed before the mailing date of the Office Action but was not considered by the Examiner. As the undersigned brought this error to the attention of the Examiner within the period for reply set in the Office Action, the undersigned requested the Examiner (i) to consider the IDS and (ii) to restart the period for reply. *See* M.P.E.P. § 710.06.

During the above-noted telephone conversation, the Examiner indicated that he would not consider the IDS nor would he restart the period for reply. Subsequent telephone calls to the Examiner were unreturned.

Applicant respectfully submits that the Examiner was required to consider the IDS. *See* M.P.E.P. § 609(III)(C)(2), page 600-131 (“Examiners must consider all citations submitted in conformance with the rules and with this section....”). Applicant further submits that the Examiner was required to return a signed copy of the IDS with the Office Action, as the Office Action was the next communication. *See id.* (“a copy of the submitted list ... as reviewed by the examiner *will be returned* to the applicant *with the next communication.*”)(*emphasis added*).

Should the Examiner rely on any reference cited in the IDS in the next action, Applicant respectfully submits that such action should not be made final. Specifically, independent claims 8 and 21 remain unchanged. Thus, any new ground of rejection of claims 8 and 21 will not be necessitated by Applicant’s amendment. *See* M.P.E.P. § 706.07(a). Should the next action include a new grounds of rejection of any original claim based on any reference cited in the IDS, finality of the action will be improper.

In the event that the Examiner rely on any reference cited in the IDS and make the next action final, Applicant intends to file a petition to withdraw finality thereof under 37 C.F.R. § 1.181.

Rejections under 35 U.S.C. § 112

The Examiner has rejected claims 20 and 25 under 35 U.S.C. §112 as being indefinite. Applicant respectfully submits that the rejection of claim 20 is rendered moot by the cancellation thereof, and the rejection of claim 25 is overcome by the accompanying amendment thereto. Each narrower temperature range has been incorporated into a respective one of new dependent claims 26-28.

Rejections under 35 U.S.C. § 102 and 103

The Examiner has rejected claims 1-20 as being anticipated by or unpatentable over one or more of U.S. Patent No. 3,963,522 to Haranda et al. (“the Haranda patent”), European Patent No. 0 256 963 to Newkirk et al. (“the Newkirk application”), and U.S. Patent No. 4,388,347 to

Shum et al. ("the Shum patent"). The Examiner's rejection of claims 1, 4, 6, 7, 13, 14 and 16-20 have been rendered moot by the cancellation thereof.

With regard to independent claim 8, the Haranda patent, Newkirk application, and the Shum patent, taken individually or combined, fail to disclose or suggest the claimed component formed of steel having a surface layer of alumina, chromia or alumina-rich or chromia-rich fully dense ceramic, the layer having been rendered electrically conductive through its thickness by the incorporation of silver into the layer.

The Haranda patent does not teach or suggest such a fully dense ceramic component. Instead, the Haranda patent concerns coating the external surface of a porous matrix of a metal oxide ceramic electrolyte with a conductive paint consisting of silver (Ag) particles (*see, e.g.,* column 2, lines 3-8). The coated electrolyte is then sintered and, after cooling, treated with a fused sodium nitrate salt to prevent subsequent changes (*see, e.g.,* column 2, lines 9-15 and 28-34). The Haranda patent is wholly concerned with electrical properties at the surface of the electrolyte, that is at an electrode-electrolyte interface. There is no disclosure or suggestion of the electrolyte being rendered electrically conductive through its thickness by the incorporation of silver into the material, let alone that the material is a body of fully dense metal oxide ceramic.

Similarly, the Newkirk application does not teach or suggest such a fully dense ceramic component. Instead, the Newkirk application is directed to a porous ceramic body which is formed by growing an oxidation reaction product (the ceramic body) from a parent metal in an oxidizing atmosphere. During the formation of the oxidation reaction product, the parent metal is continuously drawn through pores in the oxidation reaction product so as to cause the oxidation reaction product to grow at the oxidant/oxidation product interface. For instance, Example 5 discloses the aluminum metal in the pores of the oxidation reaction product is replaced by silver (*see* page 9). However, the oxidation reaction product still remains porous and there is no suggestion of a body of fully dense metal oxide ceramic material.

Nor does the Shum patent teach or suggest such a fully dense ceramic component. Instead, the Shum patent discloses the use of a paste comprising a noble metal pigment (*e.g.,*

silver) with a powder glass mixture, an organic vehicle and an organic binder (*see* column 2, lines 5-28). The paste may be conductive, partially conductive, semi-conductive or non-conductive, for silk screening onto a ceramic substrate to form, after a firing cycle, conductors, dielectrics, resistors, capacitors or semi-conductors. On firing, the organic vehicle in the paste burns off and the glass frit then melts. On cooling, “the product is a distribution of metal pigment in a glassy matrix which possess an electrical conductivity sufficient to produce minimal and predictable resistance in the electric circuit” (*see* column 2, lines 15-18).

Applicant respectfully submits that the Shum patent fails to teach or suggest that the ceramic material is fully dense, let alone that the ceramic material is rendered electrically conductive by incorporation of the noble metal pigment into the ceramic material or by any other means. Rendering the alumina electrically conductive is not taught by the Shum patent. In fact, the Shum patent teaches away from the present invention in that the Shum patent teaches that the metal pigment in the glassy matrix is electrically conductive, not the ceramic material.

Furthermore, the Shum patent fails to teach or suggest a ceramic coating that is fully dense or that has been rendered electrically conductive through its thickness by the incorporation of silver into the coating. Indeed, the Shum patent teaches away from the use of silver since the whole intent of the Shum patent is to replace any noble metal pigments by non-noble conductive metals (*see*, e.g., column 5, lines 38-40).

For at least these reasons, Applicant respectfully submits that the Harada patent, the Newkirk application, and the Shum patent, taken individually or combined, do not anticipate nor render obvious independent claim 8. Applicant submits that claims 2, 3, 5, and 9-12, which depend from claim 8, are allowable over the cited art for at least the same reasons noted above.

It is noted that Applicant respectfully traverses the Examiner’s rejection based on the grounds that the Shum patent “discloses each and every limitation, the claims are anticipated.” *See* Office Action, page 4, last paragraph. The teachings of the Shum patent fail to render obvious the present invention, much less anticipate it. While the Shum patent discloses the use of a ceramic-coated metal (column 7, lines 13-20), the Shum patent fails to disclose the use of

such ceramic-coated metal in combination with the noble metal pigments discussed in the background of the Shum patent (column 2, lines 5-28). In fact, the Shum patent teaches away from such a combination in that it appears the intent of the Shum patent is to replace the use of any noble metal pigments by non-noble conductive metals (*see*, e.g., column 5, lines 38-40). Instead, the Shum patent teaches the use of such ceramic-coated metals used in combination with an alloy of a non-noble conductive metal and at least one oxidizable material (*see*, e.g., column 6, lines 14-21). Should the Examiner maintain this rejection, Applicant respectfully requests citation of a reference in support of the Examiner's position that such a combination of the disparate teachings of the Shum patent would be obvious. *See* M.P.E.P. § 2144.03.

Allowable Subject Matter

Applicant thanks the Examiner for indicating that claims 21-24 are allowable over the cited art of record.

Applicant notes that the Examiner has not rejected claim 25 over any of the cited art of record. Applicant respectfully submits that claim 25 has been rewritten to overcome the Examiner's rejection under 35 U.S.C. § 112, second paragraph and is now allowable for at least the same reasons as claim 21, from which it depends. New claims 26-28 are similarly allowable for at least the same reasons as claim 21, from which they depend.

CONCLUSION

All of the stated grounds of objection and rejection have been properly traversed, accommodated, or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider all presently outstanding objections and rejections and that they be withdrawn. Applicant believes that a full and complete reply has been made to the outstanding Office Action and, as such, the present application is in condition for allowance. If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at the number provided below.

PATENT

Attorney Docket No. A-70685/DJB/VEJ
Attorney Matter No. 461124-00056
Application No. 09/869,544

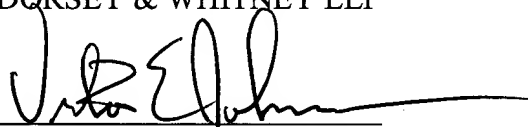
The Commissioner is hereby authorized to charge any underpayment of fees associated with this communication, including any necessary fees for extension of time or additional claims, and/or credit any overpayment to Deposit Account No. 50-2319 (Order No. 461124-00056; Docket No. A-70685/DJB/VEJ).

Prompt and favorable consideration of this Amendment and Response is respectfully requested.

Respectfully submitted,

DORSEY & WHITNEY LLP

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By: 
Victor E. Johnson, Reg. No. 41,546
/for/ David J. Brezner, Reg. No. 24,774
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DORSEY & WHITNEY LLP
Four Embarcadero Center, Suite 3400
San Francisco, CA 94111-4187
Telephone: (415) 781-1989 Facsimile: (415) 398-3249